

## Patent Claims

1. Optical system with reduced chromatic aberration, particularly for use in microscopes for imaging the light source in the aperture diaphragm of a condenser, comprising a collector assembly (2) and an apochromaticizing adapter assembly (1) which is associated with the collector assembly.
2. Optical system according to claim 1, characterized in that the adapter assembly (1) has three lenses (1.1, 1.2, 1.3), wherein one lens (1.2) having negative power is arranged between two lenses (1.1, 1.3) having positive power.
3. Optical system according to claim 2, characterized in that the three lenses (1.1, 1.2, 1.3) are separated from one another by air gaps (3, 4), and the lens surfaces (b, c; d, e) facing the air gaps (3, 4) have identical radii.
4. Optical system according to 2 or 3, characterized in that the optical characteristics of the two lenses (1.1, 1.3) having positive power are identical.
5. Optical system according to one of the preceding claims, characterized in that the collector assembly (2) has two lenses (2.1, 2.2).
6. Optical system according to one of the preceding claims, characterized in that means are provided for detachably connecting the adapter assembly (1) to interchangeable collector assemblies (2) which have different optical characteristics.
7. Optical system according to one of the preceding claims, designed for wavelengths in the range of 365 nm to 644 nm.
8. Optical system according to one of the preceding claims, characterized by the following parameters:

| Assembly  | Surface | Radius<br>r | Thickness<br>d | Refractive<br>index<br>$n_e$ | Abbe<br>Number<br>$v_e$ | Diameter |
|-----------|---------|-------------|----------------|------------------------------|-------------------------|----------|
| Adapter   | a       | 130         |                |                              |                         | 27.38334 |
|           | b       | -24         | 5              | 1.552320                     | 63.45999                | 27.38454 |
|           | c       | -24         | 0.2            |                              |                         | 26.79942 |
|           | d       | 24          | 3              | 1.647690                     | 33.849998               | 26.76505 |
|           | e       | 24          | 0.2            |                              |                         | 27.77575 |
|           | f       | -130        | 5              | 1.552320                     | 63.459999               | 27.75754 |
| Collector |         |             | 10             |                              |                         |          |
|           | g       | 25.119      |                |                              |                         | 28.39285 |
|           | h       | -54.247     | 5.8            | 1.522490                     | 59.480000               | 28.24928 |
|           | i       | 12.232      | 0.3            |                              |                         | 22.63967 |
|           | k       | 141.25      | 7.2            | 1.458464                     | 67.821443               | 22.56214 |